

pulling the ingot from the melt at a target pull rate, said target pull rate substantially following a velocity profile, said velocity profile stored in memory and defining the target pull rate;

generating a signal representative of an error between a target diameter of the ingot and a measured diameter of the ingot;

performing proportional-integral-derivative (PID) control on the error signal and generating a temperature set point as a function thereof, said temperature set point representing a target temperature of the melt;

determining a power set point for the power supplied to the heater from the temperature model as a function of the temperature set point generated by the PID control; and

adjusting the power supplied to the heater according to the power set point thereby changing the temperature of the melt to control the diameter of the ingot.

9. The method of claim 1 further comprising the step of varying the rate at which the ingot is pulled from the melt to control diameter of the ingot, said step of varying the pull rate occurring during growth of a first portion of the ingot and said step of pulling the ingot at the target pull rate substantially following the velocity profile occurring during growth of a second portion of the ingot.